

DESCRIPTIONS OF THREE NEW BATRACHIANS FROM COSTA RICA AND PANAMA.

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Among the specimens in a small collection of reptiles and batrachians recently made by Mr. A. H. Jennings on the Upper Pequini River, Republic of Panama, there is a large, conspicuously colored, and otherwise remarkable tree toad, which has been generously presented to the United States National Museum. A scarcely less remarkable tree toad of another genus, and characterized by the erect spikes surrounding the crown of its head, was simultaneously presented to our Museum by Mr. A. Alfaro, of the National Museum of Costa Rica, together with a less conspicuous, though not less interesting, new species of salamander. The last two species were collected in the valley of the Orosi, Costa Rica, by Mr. C. Picado, for whom I have named the salamander.

SPELERPES PICADOI, new species.

Diagnosis.—Legs short, not meeting on sides by the length of the hind leg; fingers and toes well developed, slightly webbed; palatine teeth well separated from parasphenoid patch, not extending exteriorly beyond the choanæ; 13 costal grooves; body elongate; tail cylindrical; color brown.

Habitat.—Costa Rica.

Type.—Cat. No. 48280, U.S.N.M.; La Estrella, southeast of Cartago, Costa Rica; C. Picado, collector.

Description of type-specimen.—Palatine teeth in two arched, continuous series, not extending outward beyond the choanæ, and well separated from the parasphenoid teeth which form a single patch; head wider than body, truncate; snout short; corner of mouth under the posterior edge of eye; nostrils large, rounded; body elongate, measuring four times the distance from snout to gular fold, and more than three times the distance between axilla and groin; legs short, not meeting on sides by the length of the hind leg; fingers and toes well developed, slightly webbed; tail cylindrical, longer than head and body; skin very smooth; a distinct gular fold; 13 costal grooves.

Color (in alcohol) above dark brown, with a pale irregular band extending from behind the eye backward over the shoulder along the sides to the groin, and another similar one, but fainter, from the occiput on each side of the back, disappearing on the anterior third of the tail; underside paler; palms and soles still more so.

Dimensions.

	<i>mm.</i>
Total length.....	66
Snout to vent.....	31
Tail.....	35
Snout to gular fold.....	6
Width of head.....	4
Between axilla and groin.....	20
Fore legs.....	5
Hind legs.....	6

HYLA CERATOPHRYS, new species.

Diagnosis.—Derm of head involved in the cranial ossification; outer fingers webbed at the base; head broader than long; choanæ very large, subtriangular; vomerine teeth between the choanæ; posterior border of casque not raised; outer edge of upper eyelid produced into a large triangular “horn.”

Habitat.—Panama.

Type.—Cat. No. 47705, U.S.N.M.; upper Pequini River, Republic of Panama, March 29, 1909; A. H. Jennings, collector.

Description of type-specimen.—Tongue subcircular, entire, and scarcely free behind; vomerine teeth in two long, slightly oblique series between the choanæ; choanæ large, subtriangular, longer in an anteroposterior direction than in the transverse direction; head large, considerably broader than long; derm of head involved in the cranial ossification; posterior edge of casque nearly straight, not raised; distance between nostril and eye nearly equals diameter of latter; loreal region concave; canthus rostralis sharp, slightly raised; interorbital space broader than upper eyelid without the “horn,” concave; superciliary edge of upper eyelid produced into a large triangular, pointed flap which overhangs the eye like a “horn;” tympanum distinct, longest diameter about one-half the diameter of the eye; no projecting rudiment of pollex; toes two-thirds webbed; disks of fingers nearly as large as tympanum, of toes slightly smaller; articular tubercles moderately developed; inner metatarsal tubercle slightly developed, no outer; no tarsal fold; the hind leg being carried forward along the body, the tibio-tarsal articulation extends forward beyond the tip of the snout by about one-third the length of the tibia; top of head finely granular, of back nearly smooth, the latter with about nine transverse, narrow lines of glandular tubercles; underside strongly granular, including throat, but not chin, which is nearly smooth; a glandular fold extending along the outer edge of the

supraocular hornlike appendage and continued backward over the tympanum along the sides to some distance beyond the axilla. Color (in alcohol) above dark olive buff with numerous narrow transverse lines of purplish brown, every other of which coincides with the transverse glandular ridges; a similar line across the head from tip of one "horn" to the other; legs cross-lined like the back, the purplish brown bands widening on the inner aspect of the thigh and tibia and narrowly bordered with pale yellowish; between the eye and edge of lip a strikingly distinct, large, triangular, yellowish white spot preceded by a similar one of dark purplish brown in strong contrast; on the sides, from the ear backward, indications of a wide purplish brown band fading out toward the groin; anal region dark purplish brown with a sharply defined, yellowish white, narrow line above; thighs uniform purplish brown, underneath with a few irregular whitish spots on the buttocks; rest of underside pale brownish.

Dimensions.

	<i>mm.</i>
Tip of snout to vent.....	74
Tip of snout to posterior edge of tympanum.....	25
Greatest width of head.....	29
Fore legs from axilla.....	49
Hind legs from vent to heel.....	88
Hind legs from vent to tip of longest toe.....	143
Tibia.....	47

Remarks.—This striking novelty, whose hornlike flap over the eye bears a strong resemblance to a similar structure in the Asiatic genus *Megophrys* as well as in the South American genus *Ceratophrys*, does not seem to be closely related to any of the known Central-American Hylas.

GASTROTHECA CORONATA, new species.

Diagnosis.—Derm of head completely involved in the cranial ossification; outline of casque behind gently concave, the edge studded with high, conical, erect, bony spines; a similar series of spines above tympanum; supraorbital crest tubercular; canthus rostralis granular; vomerine teeth on a level with the posterior edge of the choanæ; tympanum circular, nearly as large as the eye; fingers free; toes one-third webbed.

Habitat.—Costa Rica.

Type.—Cat. No. 48279, U.S.N.M.; Palomo, Valle de Orosi, Cartago, Costa Rica; altitude, 1,200 meters above the sea; April, 1911; C. Picado, collector.

Description of type-specimen.—Adult male. Tongue subcircular, entire, and scarcely free behind; vomerine teeth in two straight series on a level with the posterior edge of the choanæ; head moderate, scarcely wider than long; derm of head completely involved in the cranial ossification, forming a bony casque; outline of casque behind gently concave, the edge studded with high, conical, erect, bony spines; a similar series of spines above tympanum; supraorbital crest

tubercular; canthus rostralis raised, granular; snout rounded, slightly longer than the diameter of the orbit; crown and loreal region concave; interorbital space much wider than upper eyelid; tympanum circular, very distinct, nearly as large as the diameter of the eye; fingers free; toes one-third webbed; disks large, about three-fourths diameter of tympanum; subarticular tubercles moderate; inner metatarsal tubercle prominent, no outer; a distinct tarsal fold; heels overlapping; hind limb, being carried forward along the body, reaches anterior angle of the eye; skin coarsely granular above, more distinctly so on the abdomen and underside of thigh; throat and chest smooth. Color (in alcohol) above dark bluish slate; on the sides and in the groin, several large, vertical, dark spots, narrowly edged with whitish; hind limbs with transverse bands of dark color similarly edged with whitish; underside paler than back.

Dimensions.

	mm.
Tip of snout to vent.....	60
Tip of snout to posterior edge of tympanum.....	21
Tip of snout to posterior edge of casque on the median line.....	18
Width of head.....	22
Fore leg from axilla.....	41
Hind leg from vent.....	93
Tibia.....	31

Remarks.—The species here described is probably the same as the young specimen from Carillo, Costa Rica, described and figured by Guenther in the *Biologia Centrali-Americana*¹ as *Nototrema oviferum*, and possibly also with the Mexican specimen from Cordova in British Museum, described by Boulenger² under the same name. I feel confident, however, that none of these belong to the true *Gastrotheca ovifera* of Weinland,³ from Venezuela. In the latter the casque is enclosed behind by a “tuberculous wall” of bone, the outline of which forms a wide median extension backward and two deep sinuses laterally; the vomerine teeth are between the choanæ, and the fingers and toes are much more extensively webbed. Moreover, the color pattern is essentially different.

The genus *Gastrotheca* was established by Fitzinger in 1843,⁴ who specifically designated *Hyla marsupiata* Duméril and Bibron as the type. Fifteen years afterwards Dr. Guenther⁵ thought himself “justified in not accepting his name,” because from its supposed Greek derivation “Fitzinger appears to have believed in the existence of a pouch on the belly,” and he accordingly changed it into *Nototrema*. This, of course, is in contravention of all zoological codes of nomenclature, and Fitzinger’s name has to be restored.

¹ Biol. Centr.-Amer., Rept. Batr., 1901, p. 288, pl. 74, fig. A.

² Cat. Batr. Sal. Brit. Mus., 1882, p. 418.

³ Weinland, in Mueller’s Arch. Anat. Physiol., 1854, p. 473, pl. 17.

⁴ Syst. Rept., p. 30.

⁵ Cat. Batr. Sal. Brit. Mus., 1858, p. 115.